OSC EVALUATION OF ARARs
12th Street Landfill/Dump Site

This document summarizes various interpretations of applicable or relevant and appopriate requirements (ARARs) for the Removal Action at the 12th Street Landfill/Dump Site in Wilmington, Delaware. These interpretations were made by the OSC after review of the State regulations.

BACKGROUND

The 12th Street Landfill/Dump Site is the location of an abandoned dump of industrial debris located along the Brandywine Creek in Wilmington, Delaware. EPA conducted a Removal Site Assessment at the Site in 1999 and 2000. The dump consists primarily of industrial hoses, wire, drum remains, rubber-like material, and contaminated soil. The soil is contaminated primarily by lead, but arsenic, chromium, and some organic compounds (phthalate compounds) are also present. Access to the Site is not restricted, however, is difficult due to a stand of phragmites grass. The Creek bank is steep with sparse vegetation (except for trees). The Creek bank is actively eroding into the Creek.

Limited sampling conducted in June 1999 by the Delaware Department of Natural Resources and Environmental Control (DNREC) identified elevated levels of lead (41,900 ppm), arsenic (72.4) and chromium (317) in the soil at the Site. DNREC identified elevated lead (4,420) in the Creek sediment at the Site. Additionally, elevated levels of toluene (280) were identified as representing drum contents. A soil sample failed the Toxicity Characteristic Leaching Procedure for lead (34.6).

The EPA Removal Site Evaluation initiated in August 1999 also identified elevated concentrations of lead in surface soil (206,000), subsurface soil (264,000), and sediment (8370). A sample of drum contents identified toluene (1200) and 2-methylnapthalene (710). Additional soil and sediment sampling conducted in late 1999 and early 2000 continued to identify elevated concentrations of lead (including up to 19,500 in sediment); elevated arsenic and chromium were also identified. Drum contents also contained phenol compounds. Biotoxicity testing indicated that arsenic and chromium posed environmental threat while the results for lead were not conclusive. The volume of contaminated soil is estimated at approximately 19,000 cubic yards.

The sampling also evaluated the quality of the water beneath the Site (test pits indicate that waste is located below the water table). A ground water sample indicated lead concentrations of approximately 5 ug/L. Samples of Creek water were not collected by EPA during the Removal Site Evaluation.

In March 2000, EPA Region III approved a Time-Critical Removal Action to mitigate the threats posed to both environmental and human receptors by the 12th Street Landfill/Dump Site. The primary goal of the Removal Action is to prevent the migration of hazardous substances into the Brandywine Creek and the exposure of elevated contamination levels in the surface soil.

SCOPE of Removal Action

In order to prevent erosion of contamination from the Site, the Removal Action includes activities to reduce the Creek bank slope to a 3:1 grade and consolidate any contaminated materials removed from the bank into the remainder of the Site. Additionally, debris located within the surface soils are to be removed and staged to facilitate final grading of the Site in a manner that promotes drainage from the Site. Temporary erosion and sedimentation controls (e.g., sedimentation pond, siltation fencing) will be placed prior to earth disturbance activities and a temporary barrier will be placed alongside the Site to protect the Brandywine Creek. Contaminated sediment will be removed. Any staged debris or excess contaminated soils will be disposed offsite. The contaminated area will then be covered with soil (including a protective barrier on the Creek bank) to minimize exposure to hazardous substances; the cover will be placed over areas exceeding an average concentration of 400 mg/kg lead.

EVALUATION of ARARs

EPA and DNREC have identified a number of potential ARARs for the Removal Action. The ARARs are briefly described in the following paragraphs.

Since the contaminated soil at the Site will likely fail the TCLP, it is likely that soil that will be disposed offsite will need to be disposed pursuant to RCRA and Delaware regulations governing hazardous waste. The soil staged onsite will be removed within 90 days of staging. Contaminated material consolidated within the Site will not trigger hazardous waste disposal requirements. As such, the soil cover applied will not meet the standards for a hazardous waste landfill cap. Other materials disposed from the Site, e.g., vegetation (stumps) and certain debris, will not be subject to hazardous waste regulations, but will be disposed pursuant to Delaware regulations governing solid waste. The soil cover applied to the Site will consider the design intentions of a solid waste of RCRA cap and promote drainage from the waste area, be compacted, and properly vegetated.

Since the scope of the Removal Action consists predominantly of actions to minimize the erosion of contaminated soil to protect a waterway, the Removal Action will be conducted pursuant to technical requirements of Delaware's Sediment and Stormwater Regulations and the Delaware Erosion and Sedimentation Control Handbook. This handbook identifies actions to protect waterways from the excessive erosion of soil. The OSC has directed that an Erosion and Sedimentation control plan (Sediment and Stormwater Management Plan) be developed and followed. Site actions will be directed consistent with the Plan and routine monitoring and maintenance will ensure proper functioning.

Since the Removal Action will likely result in the entrainment of contaminated soil particles into air, Delaware regulations governing air pollution, Air Quality Standards, and certain standards of the Clean Air Act apply to the Removal Action and Site worker protection. The OSC has directed that air sampling be conducted and activities be monitored and adjusted as necessary to minimize fugitive emissions. Should sampling indicate no threat posed by dust emissions, if engineering controls prove successful, and analytical data indicate that standards are not exceeded, sampling and analysis will be discontinued.

The scope of the action does not include discharges to the Brandywine Creek and will result in a reduction of the migration of contamination to Brandywine Creek. As such, technical requirements of regulations governing the quality of discharges to surface water are not applicable to the Removal Action. Nevertheless, consistent with the Delaware Regulations Governing Hazardous Substance Cleanup, the Removal Action will not result in discharges that exceed State Water Quality Standards or would cause such exceedences.

The scope of the Removal Action does not include removal (cleanup) of all hazardous substances to identified cleanup levels. Consistent with the Delaware Regulations Governing Hazardous Substances Cleanup, the Removal Action is an Interim Response Action. Further evaluation will be necessary to determine if the scope of the Removal Action and its actions will be sufficient to enable Delaware to determine that the Removal Action is a substitute for complete remediation of the Site pursuant to the Delaware Hazardous Substance Cleanup Act. Where the Removal Action does cleanup to specified levels (e.g., sediment), the OSC will use the recommendations of the Federal Natural Resource Trustees and available risk based concentration data.

AMENDMENTS AND ADDITIONAL INFORMATION

Throughout the Removal Action additional data and information was collected. The results of sampling and analysis indicated that the area of contaminated soil was significantly larger than originally expected. The area of contamination included parcels of land generally north of the area included as part of the EPA Time-Critical Removal Action. However, since these new areas were not actively eroding into the Brandywine Creek, they were not included in the scope of the Time-Critical Removal Action.

During the Removal Action, ground water seeping through the Creek bank was sampled and analyzed. The analytical data indicate that the seeps contain elevated levels of Site contaminants: lead (1780 ug/L), arsenic (241 ug/L), and chromium (353 ug/L). The seeps likely contribute to concentrations of these contaminants in the Brandywine Creek water at the locations of these seeps (as measured during slack high tide). However, the contaminant concentrations in the Surface Water do not rise to the level of toxicity that would trigger the need for Removal Action. As such, activities to prevent leaching from the dump area did not become a primary goal of the Time-Critical Removal Action. Nevertheless, the OSC directed actions in such a way as to minimize the potential for ground water migration through the waste material to reduce the potential for leaching. The OSC directed that ponded water upgradient of the dump be directed through the dump (via piping) into the Creek after consultation with Delaware Stormwater Control, that the sedimentation pond be removed, and that the soil cover be graded and compacted to promote drainage from the Site. These actions will reduce the amount of ground water and infiltrating precipitation that contacts the waste materials. The OSC found that a significant amount of the waste may rest below the water table.

Additional Removal Actions not originally anticipated:

The OSC directed that a plastic pipe be installed through the dump to reduce the amount of water that might otherwise pass through the contaminated material and discharge into the Creek. This action was coordinated with DNREC pursuant to stormwater control requirements.